CLAIMS

What is claimed is:

1   1. A computer-based method for computation of similarity matrices of objects in a high-

dimensional space of attributes with the purpose of clustering by method for evolutionary

transformation of similarity matrices, allowing for fusion of different attributes

(parameters) on a dimensionless basis, comprising the steps of:

5   a) computation of similarity matrices for each of attributes (parameters)

individually, such matrices being monomer similarity matrices;

    and

        b) hybridization of all monomer similarity matrices into one hybrid matrix which

is further used in clustering process.

1   2. The method of claim 1 wherein said hybridization of monomer similarity matrices is

performed so that all similarity coefficients in monomer similarity matrices for one and

the same pair of objects are averaged through computation of their geometric or

arithmetic means.

1   3. The method of claim 1 wherein each of monomer similarity matrices used in

computation of a hybrid matrix is computed with the use of a metric that most optimally

suits a respective attribute (parameter).

1   4. The method of claim 3 wherein a choice of metrics used in computation of monomer

similarity matrices for further hybridization into a hybrid matrix depends on whether a

respective attribute (parameter) describes a shape or power of an object.

1   5. The method of claim 4 wherein attributes (parameters) should be treated either as those

describing a shape or as those describing a power, depending on a problem to be solved by

clustering analysis.

1   6. The method of claim 4 wherein monomer similarity matrices based on attributes

(parameters) describing shapes of objects are computed with the use of a metric

representing a ratio of a lesser value to a greater value of exponential functions in which a

base is a constant > 1 and an exponent is a value of a respective parameter.

1   7. The method of claim 4 wherein monomer matrices based on attributes (parameters)

describing power of objects are computed with the use of a metric representing a ratio of a

lower value of a parameter to its higher value.

1   8. The method of claim 1 wherein each and any of said monomer matrices may be

multiplied and added to a hybrid matrix in an indefinite number of extra copies with the

purpose of emphasizing certain parameters or establishing their significance.

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